
SC-DHEC Local Implementation Guide for HL7 2.5.1 Immunization Messaging

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1. Introduction

In order for different health information systems to exchange data, the structure and content of the data to be exchanged must be standardized. Three controlling documents define how the **SC-DHEC IIS** HL7 data exchange interface works. They are arranged in a hierarchy of documents, each refining and constraining the HL7 Standard.

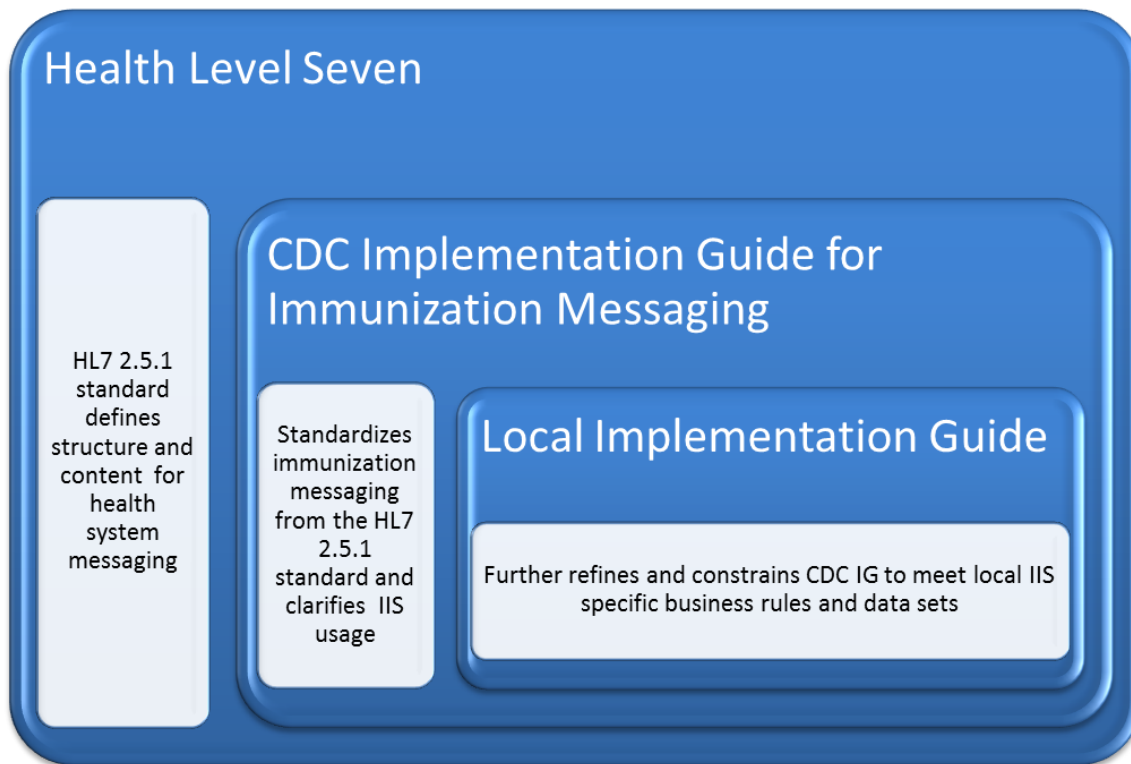


Figure 1: HL7 Controlling Document Hierarchy

The first document is the HL7 2.5.1 standard developed by Health Level Seven, a not-for-profit ANSI-accredited standards developing organization. This standard defines the structure and content of immunization messages, but leaves many specific implementation details undecided. Beneficial information on HL7 and a copy of the HL7 message standard can be obtained from the Health Level Seven website at <http://www.hl7.org>.

The second document is the CDC's **HL7 2.5.1 Implementation Guide for Immunization Messaging, Release 1.3** (CDC IG). This guide gives specific instructions regarding how to report to immunization information systems, but still leaves some implementation decisions to each state IIS. This guide and other technical information can be obtained from the CDC website at <http://www.cdc.gov/vaccines/programs/iis/stds/standards.htm>.

The third document is this document. It finalizes all implementation decisions and defines exactly what **SC-DHEC IIS** will and will not accept. It is written in accordance with the standards set in the first two documents.

This local implementation guide has taken great care to point out differences from the CDC IG by adding additional columns to the tables. In cases where this guide differs from the CDC IG, this guide will provide both the CDC IG column followed the local usage specification. This effort will prove highly useful in the larger interoperability effort for Electronic Health Record Systems, Indian Health Services, and any other electronic exchange that may span multiple IIS. Providing this information will allow the implementers of external systems to accurately compare the CDC IG with a local implementation guide, and compare differences between two different local implementation guides much easier than in the past.

Intended Audience

This Local IG is intended for technical groups from IIS and EHR-S that must implement these guidelines. The reader of this Local IG should have a solid HL7 foundation and be very familiar with the contents of the CDC IG (<http://www.cdc.gov/vaccines/programs/iis/stds/standards.htm>). Chapters 2 and 3 of the CDC IG provide HL7 foundational concepts and set the stage for this Local IG. The goal of this Local IG is to provide an unambiguous specification for creating and interpreting messages.

Scope

This Local IG is intended to facilitate the exchange of immunization records between external Health Systems and **SC-DHEC IIS**. This includes:

- sending and receiving immunization histories for individuals
- sending and receiving demographic information about the individuals
- requesting immunization histories for individuals
- responding to requests for immunization histories by returning immunization histories
- acknowledging receipt of immunization histories and requests for immunization histories
- reporting errors in the messaging process
- Sending observations about an immunization event (this may include funding, reactions, forecasts and evaluations).

Organization and Flow

This Local IG is designed to mirror the organization and flow of the CDC IG. This chapter of this guide defines the high-level use cases supported by **SC-DHEC IIS**. The subsequent chapters define how **SC-DHEC IIS** implements those use cases. Finally, this guide has appendices for the code tables and example messages.

It is important to note this guide adheres to the CDC IG on several key aspects including

- Data type specifications from chapter 3 of the CDC IG have not been redefined and usage has not been changed
- Standardized vocabulary is supported as specified in the CDC IG
- To the extent possible, data sets and business rules will adhere to the CDC IG.

In cases where differences exist between this guide and the CDC IG the differences will be clearly defined in the appropriate sections of this guide.

2. Actors, Goals, and Messaging Transactions

Chapter 2 of the CDC IG defines actors (entities) that may be involved in sending or receiving immunization-related messages. It describes what actors are and how use cases (goals) can be associated to those actors. Finally, it associates specific HL7 messages with these use cases.

There are nine use cases defined in Chapter 2 of the CDC IG. The use cases listed in the CDC IG and supported by **SC-DHEC IIS** are:

Use Case	Goal	Supported by <i>SC-DHEC IIS</i>
Send Immunization History	To send an immunization history for an individual client from one system to another. In addition to EHR-S and IIS, other systems such as vital records systems or billing systems could use this message to send immunization histories.	No
Receive Immunization History	To receive an unsolicited immunization history. It may be an update or a new record.	Yes
Request Immunization History	To request an immunization history from another system.	No
Return Immunization History	To return an immunization history to another system.	Yes
Accept Requested History	To accept an immunization history in response to a query for an immunization history from another system.	No
Send Demographic Data	To send demographic data about a person. It may be an update or a new record.	No
Accept Demographic Data	To accept demographic data about a person. It may be an update or a new record.	No
Acknowledge Receipt	To acknowledge receipt of a message. This can be an immunization history, request for immunization history, demographic update, observation report or request for personal id. It may indicate success or failure. It may include error messages.	Yes
Report Error	To send error messages related to submitted messages. These errors could	Yes

Use Case	Goal	Supported by <i>SC-DHEC IIS</i>
	result of rejection of message or parts of message.	

For detailed specifics about each use case, please refer to Chapter 2 of the CDC IG.

3. HL7 Messaging Infrastructure

The CDC IG contains basic descriptions of terms and definitions that are used in both the CDC IG and this guide. To avoid potentially ambiguous situations, the majority of the terms and definitions will not be redefined in this guide.

A key attribute to HL7 fields, components, and sub-components is the Usage Code. In the table below are the acceptable Usage Codes used in this implementation guide.

Usage	Information
R – Required	The sending application SHALL populate “R” elements with a non-empty value.
RE – Required but may be empty	The sending application SHALL populate “RE” elements with a non-empty value if there is relevant data.
C(a/b) – Conditional	<p>The sending application SHALL follow the usage of the “a” half of the conditional usage if the conditional predicate is true.</p> <p>The sending application SHALL follow the usage of the “b” half of the conditional usage if the conditional predicate is false.</p> <p>“a” and “b” shall be “R”, “RE”, “O”, or “X”. “a” and “b” can be valued the same or differently.</p>
O – Optional	These elements are entirely optional to provide by the sending system and also optional to consume by the IIS.
X – Not Supported	The sending application SHALL NOT populate “X” elements.

4. HL7 Data Types

The CDC IG contains clearly defined HL7 data types that are the building blocks of an HL7 message. Similar to the terms and definitions found in the HL7 Messaging Infrastructure section above, this guide will avoid potentially ambiguous situations and not attempt to redefine an already clearly defined section. This guide will adhere to Chapter 4 of the CDC IG.

5. Segments and Message Details

This chapter will contain specifications for each segment used. It will indicate which fields are supported or required and describe any constraints on these fields. Chapter 6 will address how these building blocks are assembled into specific messages that meet the use cases listed in Chapter 2.

Table 5-1 Message Segments

Segment (Name/Role)	Definition	Message Usage	CDC IG Usage	SC-DHEC IIS Usage	Note
BHS (Batch Header Segment)	The Batch Header Segment wraps a group of 1 or more messages. These may be a mixture of acceptable message types. This segment is not required for real-time messaging. That is, a stream of messages may be sent without a BHS. A system may choose to require BHS for all groups of messages, but should specify this requirement in a local implementation Guide.	Any	Optional	Optional	Used at the beginning of any batch of messages.
BTS (Batch Trailer Segment)	The BTS segment defines the end of a batch. It is required if the message has a matching BHS.	Any	Required if message starts with BHS.	Required if message starts with BHS.	Used to mark the end of any batch of messages. If the batch of messages starts with a BHS, then this segment is required.

Segment (Name/Role)	Definition	Message Usage	CDC IG Usage	<i>SC-DHEC IIS</i> Usage	Note
ERR (Error Segment)	The error segment reports information about errors in processing the message. The segment may repeat. Each error will have its' own ERR segment.	ACK, RSP	Ability to create and process is required for conformant systems.	Ability to create and process is required for conformant systems.	Used to return information about errors.
FHS (File Header Segment)	The file header segment may be used to group one or more batches of messages. This is a purely optional segment, even if batches are sent. Its' use is not anticipated for use in real-time transactions. Any system that anticipates its use should specify this in a local implementation Guide.	Any	Optional	Optional	Used to mark the beginning of a file of batches.
FTS (File Trailer Segment)	The FTS segment defines the end of a file of batches. It is only used when the FHS segment is used.	Any	Required to terminate a file of batches. (Matches FHS)	Required to terminate a file of batches. (Matches FHS)	Used to mark the end of a file of batches. If a file of batches has an FHS at the beginning, then this segment is required.
IN1-3 (Insurance Segment)	The IN1-IN3 segments contain insurance policy coverage information necessary to produce properly	VXU	Optional	Optional	This segment is not anticipated for use in immunization messages,

Segment (Name/Role)	Definition	Message Usage	CDC IG Usage	SC-DHEC IIS Usage	Note
	pro-rated and patient and insurance bills.				but may be specified for local use.
MSA (Message Acknowledgement Segment)	This segment is included in the query response (RSP) and acknowledgment (ACK) messages. It contains information used to identify the receiver's acknowledgement response to an identified prior message.	RSP, ACK	Ability to create and process is required for conformant systems.	Ability to create and process is required for conformant systems.	
MSH (Message Segment Header)	The MSH segment defines the intent, source, destination, and some specifics of the syntax of a message.	All	Ability to create and process is required for conformant systems.	Ability to create and process is required for conformant systems.	This begins every message and includes information about the type of message, how to process it, and by whom it was created.
NK1 (Next of Kin Segment)	The NK1 segment contains information about the patient's next of kin or other related parties. Any associated parties may be identified.	VXU, ADT, RSP	Ability to create and process is required for conformant systems.	Ability to create and process is required for conformant systems.	Used to carry information about the next of kin for a client.
NTE (Note Segment)	The NTE segment is used for sending notes and comments. It is used in relation to OBX in the VXU and RSP.	VXU, ADT, RSP	Ability to create and process is	Ability to create and process is	Used to carry a note related to the parent segment.

Segment (Name/Role)	Definition	Message Usage	CDC IG Usage	SC-DHEC IIS Usage	Note
			required for conformant systems.	required for conformant systems.	
OBX (Observation Result Segment)	The observation result segment has many uses. It carries observations about the object of its parent segment. In the VXU/RSP it is associated with the RXA or immunization record. The basic format is a question and an answer.	ADT, VXU, RSP	Ability to create and process is required for conformant systems.	Ability to create and process is required for conformant systems.	Used to report one atomic part of an observation.
ORC (Order Request Segment)	The Common Order segment (ORC) is used to transmit fields that are common to all orders (all types of services that are requested). While not all immunizations recorded in an immunization message are able to be associated with an order, each RXA must be associated with one ORC, based on HL7 2.5.1 standard.	VXU, RSP	Ability to create and process is required for conformant systems.	Ability to create and process is required for conformant systems.	Used to give information about a group of one or more orders (typically RXA).
PD1 (Patient Demographic Segment)	The patient additional demographic segment contains demographic information that is likely to change about the patient. In immunization messages, this is information about the	VXU, RSP, ADT	Ability to create and process is required for	Ability to create and process is required for	Used to give information about a patient. A primary use in immunization messages is to give information

Segment (Name/Role)	Definition	Message Usage	CDC IG Usage	SC-DHEC IIS Usage	Note
	need to protect the client's information, how they should be part of reminder efforts and their current status in the IIS.		conformant systems.	conformant systems.	about privacy and whether contact is allowed.
PID (Patient Identifier Segment)	This segment contains permanent patient identifying and demographic information that, for the most part, is not likely to change. Used by all applications as the primary means of communicating patient identification information frequently.	VXU, ADT, RSP	Ability to create and process is required for conformant systems.	Ability to create and process is required for conformant systems.	Used to carry information about the patient/client.
PV1 (Patient Visit Segment)	This segment contains information related to a specific visit.	VXU, ADT, RSP	Optional	Optional	Previously used to carry funding program eligibility status. Use OBX for this purpose now.
QAK (Query acknowledgement segment)	The QAK segment contains information sent with responses to a query.	RSP	Ability to create and process is required for conformant systems.	Ability to create and process is required for conformant systems.	

Segment (Name/Role)	Definition	Message Usage	CDC IG Usage	<i>SC-DHEC IIS</i> Usage	Note
QPD	Query parameter definition	QBP, RSP	Ability to create and process is required for conformant systems.	Ability to create and process is required for conformant systems.	
RCP	Response control parameter segment	QBP	Ability to create and process is required for conformant systems.	Ability to create and process is required for conformant systems.	
RXA	Pharmacy/Treatment Administration Segment	VXU, RSP	Ability to create and process is required for conformant systems.	Ability to create and process is required for conformant systems.	
RXR	Pharmacy/Treatment Route Segment	VXU, RSP	Ability to create and process is required for	Ability to create and process is required for	

Segment (Name/Role)	Definition	Message Usage	CDC IG Usage	SC-DHEC IIS Usage	Note
			conformant systems.	conformant systems.	

BHS—Batch Header Segment

Table 5-2 Batch Header Segment (BHS)

SEQ	Element Name	Data Type	Value set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
1	Batch Field Separator	ST		[1..1]	[1..1]	R	R	
2	Batch Encoding Characters	ST		[1..1]	[1..1]	R	R	
3	Batch Sending Application	HD		[0..1]	[0..1]	O	O	
4	Batch Sending Facility	HD		[0..1]	[0..1]	O	O	
5	Batch Receiving Application	HD		[0..1]	[0..1]	O	O	
6	Batch Receiving Facility	HD		[0..1]	[0..1]	O	O	
7	Batch Creation Date/Time	TS		[0..1]	[0..1]	O	O	
8	Batch Security	ST		[0..1]	[0..1]	O	O	
9	Batch Name/ID/Type	ST		[0..1]	[0..1]	O	O	
10	Batch Comment	ST		[0..1]	[0..1]	O	O	
11	Batch Control ID	ST		[0..1]	[0..1]	O	O	
12	Reference Batch Control ID	ST		[0..1]	[0..1]	O	O	

BHS Field Definitions

BHS-1 Batch Field Separator (ST) 00081

Definition: This field contains the separator between the segment ID and the first real field, BHS-2-batch encoding characters. As such it serves as the separator and defines the character to be used as a separator for the rest of the message. The required value is |,(ASCII 124). Note that this field is different from other fields and immediately follows the Segment name code.

BHS|

↑

Separator

BHS-2 Batch Encoding Characters (ST) 00082

Definition: This field contains the four characters in the following order: the component separator, repetition separator, escape characters, and subcomponent separator. The required values are ^~\& (ASCII 94, 126, 92, and 38, respectively).

BTS—Batch Trailer Segment

Table 5-3 Batch Trailer Segment (BTS)

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC //S Cardinality	CDC IG Usage	SC-DHEC //S Usage	Conditional Predicate
1	Batch Message Count	ST		[0..1]	[0..1]	O	O	
2	Batch Comment	ST		[0..1]	[0..1]	O	O	
3	Batch Totals	NM		[0..1]	[0..1]	O	O	

ERR—Error Segment

Table 5-4 Error Segment (ERR)

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
1	Error Code and Location	ELD		[0..0]	[0..1]	X	O	
2	Error Location	ERL		[0..1]	[0..1]	RE	RE	
3	HL7 Error Code	CWE	0357	[1..1]	[1..1]	R	R	
4	Severity	ID	0516	[1..1]	[1..1]	R	R	
5	Application Error Code	CWE		[0..1]	[0..1]	O	O	
6	Application Error Parameter	ST		[0..1]	[0..1]	O	O	
7	Diagnostic Information	TX		[0..1]	[0..1]	O	O	
8	User Message	TX		[0..1]	[0..1]	O	O	
9	Inform Person Indicator	IS		[0..1]	[0..1]	O	O	
10	Override Type	CWE		[0..1]	[0..1]	O	O	
11	Override Reason Code	CWE		[0..1]	[0..1]	O	O	
12	Help Desk Contact Point	XTN		[0..1]	[0..1]	O	O	

ERR field definitions:

Note: ERR-1 is not supported for use in messages starting with version 2.5.

ERR-2 Error Location (ERL) 01812

Definition: Identifies the location in a message related to the identified error, warning or message. Each error will have an ERR, so no repeats are allowed on this field. This field may be left empty if location is not meaningful. For example, if is unidentifiable, an ERR to that effect may be returned.

ERR-3 HL7 Error Code (CWE) 01813

Definition: Identifies the HL7 (communications) error code. Refer to HL7 Table 0357 – Message Error Condition Codes for valid values.

ERR-4 Severity (ID) 01814

Definition: Identifies the severity of an application error. Knowing if something is Error, Warning or Information is intrinsic to how an application handles the content. Refer to HL7 Table 0516 - Error severity for valid values. If ERR-3 has a value of "0", ERR-4 will have a value of "I".

Example with error in PID:

ERR| |PID^1^5|101^Required field missing^HL70357^^^|E|

FHS—File Header Segment

Table 5-5 File Header Segment (FHS)

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
1	File Field Separator	ST		[1..1]	[1..1]	R	R	
2	File Encoding Characters	ST		[1..1]	[1..1]	R	R	
3	File Sending Application	HD		[0..1]	[0..1]	O	O	
4	File Sending Facility	HD		[0..1]	[0..1]	O	O	
5	File Receiving Application	HD		[0..1]	[0..1]	O	O	
6	File Receiving Facility	HD		[0..1]	[0..1]	O	O	
7	File Creation Date/Time	TS		[0..1]	[0..1]	O	O	
8	File Security	ST		[0..1]	[0..1]	O	O	
9	File Name/ID	ST		[0..1]	[0..1]	O	O	

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
10	File Header Comment	ST		[0..1]	[0..1]	O	O	
11	File Control ID	ST		[0..1]	[0..1]	O	O	
12	Reference File Control ID	ST		[0..1]	[0..1]	O	O	

FHS Field Definitions

FHS-1 File Field Separator (ST) 00067

Definition: This field has the same definition as the corresponding field in the MSH segment. The value shall be |.

Note that this field is different from other fields and follows the segment name code immediately.

FHS|

FHS-2 File Encoding Characters (ST) 00068

Definition: This field has the same definition as the corresponding field in the MSH segment. The value shall be ^~\&

FTS—File Trailer Segment

Table 5-6 File Trailer Segment (FTS)

SEQ	Element Name	Data Type	Value set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
1	File Batch Count	NM		[0..1]	[0..1]	O	O	
2	File Trailer Comment	ST		[0..1]	[0..1]	O	O	

IN1—Insurance Segment (IN2, IN3)

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
1	SET ID	SI			[1..1]		R	
2	Insurance Plan ID	CE			[1..1]		RE	
3	Insurance Company ID	CX			[1..1]		RE	
4	Insurance Company Name	XON			[0..1]		O	
5	Insurance Company Address	XAD			[0..1]		O	
6	Insurance Co Contact Person	XPN			[0..1]		O	
7	Insurance Co Phone Number	XTN			[0..1]		O	
8	Group Number	ST			[0..1]		O	
9	Group Name	XON			[0..1]		O	
10	Insured's Group Emp ID	CX			[0..1]		O	
11	Insured's Group Emp Name	XON			[0..1]		O	
12	Plan Effective Date	DT			[0..1]		O	
13	Plan Expiration Date	DT			[0..1]		O	
14	Authorization Information	AUI			[0..1]		O	
15	Plan Type	IS			[0..1]		O	
16	Name Of Insured	XPN			[0..1]		O	
17	Insured's Relationship To Patient	CE			[0..1]		O	
18	Insured's Date Of Birth	TS			[0..1]		O	
19	Insured's Address	XAD			[0..1]		O	
20	Assignment Of Benefits	IS			[0..1]		O	
21	Coordination Of Benefits	IS			[0..1]		O	

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
22	Coord Of Ben. Priority	ST			[0..1]		O	
23	Notice Of Admission Flag	ID			[0..1]		O	
24	Notice Of Admission Date	DT			[0..1]		O	
25	Report Of Eligibility Flag	ID			[0..1]		O	
26	Report Of Eligibility Date	DT			[0..1]		O	
27	Release Information Code	IS			[0..1]		O	
28	Pre-Admit Cert (PAC)	ST			[0..1]		O	
29	Verification Date/Time	TS			[0..1]		O	
30	Verification By	XCN			[0..1]		O	
31	Type Of Agreement Code	IS			[0..1]		O	
32	Billing Status	IS			[0..1]		O	
33	Lifetime Reserve Days	NM			[0..1]		O	
34	Delay Before L.R. Day	NM			[0..1]		O	
35	Company Plan Code	IS			[0..1]		O	
36	Policy Number	ST			[0..1]		O	
37	Policy Deductible	CP			[0..1]		O	
38	Policy Limit - Amount	CP			[0..1]		O	
39	Policy Limit - Days	NM			[0..1]		O	
40	Room Rate - Semi-Private	CP			[0..1]		O	
41	Room Rate - Private	CP			[0..1]		O	
42	Insured's Employment Status	CE			[0..1]		O	
43	Insured's Administrative Sex	IS			[0..1]		O	
44	Insured's Employer's Address	XAD			[0..1]		O	
45	Verification Status	ST			[0..1]		O	

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
46	Prior Insurance Plan ID	IS			[0..1]		O	
47	Coverage Type	IS			[0..1]		O	
48	Handicap	IS			[0..1]		O	
49	Insured's ID Number	CX			[0..1]		O	
50	Signature Code	IS			[0..1]		O	
51	Signature Code Date	DT			[0..1]		O	
52	Insured's Birth Place	DT			[0..1]		O	
53	VIP Indicator	TS			[0..1]		O	

MSA—Message Acknowledgement Segment

Table 5-7 Message Acknowledgement Segment (MSA)

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
1	Acknowledgment Code	ID	0008	[1..1]	[1..1]	R	R	
2	Message Control ID	ST		[1..1]	[1..1]	R	R	
3	Text Message	ST		[0..0]	[0..1]	X	O	
4	Expected Sequence Number	NM		[0..1]	[0..1]	O	O	
5	Delayed Acknowledgment Type			[0..1]	[0..1]	O	O	
6	Error Condition	CE		[0..0]	[0..1]	X	O	

MSA Field Definitions

MSA-1 Acknowledgment Code (ID) 00018

Definition: This field contains an acknowledgment code. See message processing rules. Refer to HL7 Table 0008 - Acknowledgment code for valid values.

MSA-2 Message Control ID (ST) 00010

Definition: This field contains the message control ID of the message sent by the sending system. It allows the sending system to associate this response with the message for which it is intended. This field echoes the message control id sent in MSH-10 by the initiating system.

MSH—Message Header Segment

HL7 ATTRIBUTE TABLE - MSH - MESSAGE HEADER

Table 5-8 Message Header Segment (MSH)

SEQ	Element Name	Data Type	Value set	CDC IG Cardinality	SC-DHEC //S Cardinality	CDC IG Usage	SC-DHEC //S Usage	Conditional Predicate
1	Field Separator	ST		[1..1]	[1..1]	R	R	
2	Encoding Characters	ST		[1..1]	[1..1]	R	R	
3	Sending Application	HD	0361	[0..1]	[0..1]	RE	RE	
4	Sending Facility	HD	0362	[0..1]	[1..1]	RE	R	
5	Receiving Application	HD	0361	[0..1]	[0..1]	RE	RE	
6	Receiving Facility	HD	0362	[0..1]	[0..1]	RE	RE	
7	Date/Time Of Message	TS		[1..1]	[1..1]	R	R	
8	Security	ST		[0..1]	[0..1]	O	O	
9	Message Type	MSG		[1..1]	[1..1]	R	R	

SEQ	Element Name	Data Type	Value set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
10	Message Control ID	ST		[1..1]	[1..1]	R	R	
11	Processing ID	PT		[1..1]	[1..1]	R	R	
12	Version ID	VID		[1..1]	[1..1]	R	R	
13	Sequence Number	NM		[0..1]	[0..1]	O	O	
14	Continuation Pointer	ST		[0..1]	[0..1]	O	O	
15	Accept Acknowledgement Type	ID	0155	[0..1]	[0..1]	RE	RE	
16	Application Acknowledgment Type	ID	0155	[0..1]	[0..1]	RE	RE	
17	Country Code	ID		[0..1]	[0..1]	O	O	
18	Character Set	ID		[0..1]	[0..1]	O	O	
19	Principal Language Of Message	CE		[0..1]	[0..1]	O	O	
20	Alternate Character Set Handling Scheme	ID		[0..1]	[0..1]	O	O	
21	Message Profile Identifier	EI		[0..*]	[0..*]	C(R/O)	C(R/O)	If MSH-9.1 is valued "QBP" or "RSP"

MSH Field Definitions

MSH-1 Field Separator (ST) 00001

Definition: This field contains the separator between the segment ID and the first real field, MSH-2-encoding characters. As such it serves as the separator and defines the character to be used as a separator for the rest of the message. Required value is |, (ASCII 124).

Example:

MSH|



MSH-2 Encoding Characters (ST) 00002

Definition: This field contains the four characters in the following order: the component separator, repetition separator, escape character, and subcomponent separator. Required values are ^~\& (ASCII 94, 126, 92, and 38, respectively).

MSH-3 Sending Application (HD) 00003

Definition: This field uniquely identifies the sending application. In the case of an IIS, it will be found in the list of IIS applications in Appendix A, User-defined table 0361. This is not the product, but rather the name of the specific instance. For instance, the IIS in Georgia (GRITS) is an instance based on the Wisconsin IIS (WIR). The code for GRITS would be specific to GRITS. Additional locally defined codes may be added to accommodate local needs. The first component shall be the name space id found in User-defined Table 0361, including local additions to this table. The second and third components are reserved for use of OIDs.

MSH-4 Sending Facility (HD) 00004

Definition: This field identifies the organization responsible for the operations of the sending application. Locally defined codes may be added to accommodate local needs. The first component shall be the name space id found in User-defined Table 0362. The second and third components are reserved for use of OIDs or other universal identifiers.

MSH-5 Receiving Application (HD) 00005

Definition: This field uniquely identifies the receiving application. In the case of an IIS, it will be found in the list of IIS applications in Appendix A, User-defined table 0361. This is not the product, but rather the name of the specific instance. For instance, the IIS in Georgia (GRITS) is an instance based on the Wisconsin IIS (WIR). The code for GRITS would be specific to GRITS. Additional locally defined codes may be added to accommodate local needs. The first component shall be the name space id found in User-defined Table 0361. The second and third components are reserved for use of OIDs.

MSH-6 Receiving Facility (HD) 00006

Definition: This field identifies the organization responsible for the operations of the receiving application. Locally defined codes may be added to accommodate local needs. The first component shall be the name space id found in User-defined Table 0362. The second and third components are reserved for use of OIDs.

MSH-7 Date/Time Of Message (TS) 00007

Definition: This field contains the date/time that the sending system created the message. The degree of precision must be at least to the minute. The time zone must be specified and will be used throughout the message as the default time zone.

MSH-9 Message Type (MSG) 00009

Definition: This field contains the message type, trigger event, and the message structure ID for the message. Message structure component is required.

MSH-10 Message Control ID (ST) 00010

Definition: This field contains the identifier assigned by the sending application (MSH.3) that uniquely identifies a message instance. This identifier is unique within the scope of the sending facility (MSH.4), sending application (MSH.3), and the YYYYMMDD portion of message date (MSH.7). The receiving system echoes this ID back to the sending system in the Message acknowledgment segment (MSA). The content and format of the data sent in this field is the responsibility of the sender. The receiver returns exactly what was sent in response messages.

MSH-11 Processing ID (PT) 00011

Definition: This field is used to decide whether to process the message as defined in HL7 Application (level 7) Processing rules. Reference Table HL7 0103 in Appendix A. The choices are Production, Debugging and Training. In most cases, P or Production should be used.

MSH-12 Version ID (VID) 00012

Definition: This field contains the identifier of the version of the HL7 messaging standard used in constructing, interpreting, and validating the message. Only the first component need be populated.

Messages conforming to the specifications in this Guide shall indicate that the version is 2.5.1.

MSH-15 Accept Acknowledgment Type (ID) 00015

Definition: This field identifies the conditions under which accept acknowledgments are required to be returned in response to this message. Required for enhanced acknowledgment mode. Refer to HL7 Table 0155 - Accept/application acknowledgment conditions for valid values.

Accept acknowledgement indicates if the message was safely received or not. It does not indicate successful processing. Application acknowledgement indicates the outcome of processing.
--

MSH-16 Application Acknowledgment Type (ID) 00016

Definition: This field contains the conditions under which application acknowledgments are required to be returned in response to this message. Required for enhanced acknowledgment mode.

Note: If MSH-15-accept acknowledgment type and MSH-16-application acknowledgment type are omitted (or are both empty), the original acknowledgment mode rules are used. This means that, unless otherwise specified, the receiving application will send acknowledgment when it has processed the message.

MSH-17 Country Code (ID) 00017

Definition: This field contains the country of origin for the message. The values to be used are those of ISO 3166,¹. The ISO 3166 table has three separate forms of the country code: HL7 specifies that the 3-character (alphabetic) form be used for the country code. If this field

¹ Available from ISO 1 Rue de Varembe, Case Postale 56, CH 1211, Geneve, Switzerland

is not valued, then assume that the code is USA. Refer to HL7 Table 0399 – Country code for the 3-character codes as defined by ISO 3166-1.

MSH-21 Message Profile Identifier (EI) 01598

Definition: Sites may use this field to assert adherence to, or reference, a message profile. Message profiles contain detailed explanations of grammar, syntax, and usage for a particular message or set of messages. Chapter 7 describes the query profile for requesting an immunization history. It also includes child profiles that constrain the response to the query.

This field will be required whenever a profile is being used to constrain the message.

NK1—Next of Kin Segment

The NK1 segment contains information about the patient's other related parties. Any associated parties may be identified. Utilizing NK1-1 - set ID, multiple NK1 segments can be sent to patient accounts. That is, each subsequent NK1 increments the previous set ID by 1. Therefore, if 3 NK1 were sent in one message, the first would have a set id of 1, the second would have 2 and the third would have 3.

Table 5-9-Next of Kin Segment (NK1)

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
1	Set ID - NK1	SI		[1..1]	[1..1]	R	R	
2	Name	XPN		[1..*]	[1..*]	R	R	
3	Relationship	CE	0063	[1..1]	[1..1]	R	R	
4	Address	XAD		[0..*]	[0..*]	RE	RE	
5	Phone Number	XTN		[0..*]	[0..*]	RE	RE	
6	Business Phone Number	XTN		[0..*]	[0..*]	O	O	
7	Contact Role	CE		[0..1]	[0..1]	O	O	
8	Start Date	DT		[0..1]	[0..1]	O	O	

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
9	End Date	DT		[0..1]	[0..1]	O	O	
10	Next of Kin / Associated Parties Job Title	ST		[0..1]	[0..1]	O	O	
11	Next of Kin / Associated Parties Job Code/Class	JCC		[0..1]	[0..1]	O	O	
12	Next of Kin / Associated Parties Employee Number	CX		[0..1]	[0..1]	O	O	
13	Organization Name - NK1	XON		[0..1]	[0..1]	O	O	
14	Marital Status	CE		[0..1]	[0..1]	O	O	
15	Administrative Sex	IS		[0..1]	[0..1]	O	O	
16	Date/Time of Birth	TS		[0..1]	[0..1]	O	O	
17	Living Dependency	IS		[0..1]	[0..1]	O	O	
18	Ambulatory Status	IS		[0..1]	[0..1]	O	O	
19	Citizenship	CE		[0..1]	[0..1]	O	O	
20	Primary Language	CE		[0..1]	[0..1]	O	O	
21	Living Arrangement	IS		[0..1]	[0..1]	O	O	
22	Publicity Code	CE		[0..1]	[0..1]	O	O	
23	Protection Indicator	ID		[0..1]	[0..1]	O	O	
24	Student Indicator	IS		[0..1]	[0..1]	O	O	
25	Religion	CE		[0..1]	[0..1]	O	O	
26	Mother's Maiden Name	XPN		[0..1]	[0..1]	O	O	
27	Nationality	CE		[0..1]	[0..1]	O	O	
28	Ethnic Group	CE		[0..1]	[0..1]	O	O	
29	Contact Reason	CE		[0..1]	[0..1]	O	O	

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
30	Contact Person's Name	XPN		[0..1]	[0..1]	O	O	
31	Contact Person's Telephone Number	XTN		[0..1]	[0..1]	O	O	
32	Contact Person's Address	XAD		[0..1]	[0..1]	O	O	
33	Next of Kin/Associated Party's Identifiers	CX		[0..1]	[0..1]	O	O	
34	Job Status	IS		[0..1]	[0..1]	O	O	
35	Race	CE		[0..1]	[0..1]	O	O	
36	Handicap	IS		[0..1]	[0..1]	O	O	
37	Contact Person Social Security Number	ST		[0..1]	[0..1]	O	O	
38	Next of Kin Birth Place	ST		[0..1]	[0..1]	O	O	
39	VIP Indicator	IS		[0..1]	[0..1]	O	O	

NK1 Field Definitions

NK1-1 Set ID - NK1 (SI) 00190

Definition: This field contains the number that identifies this transaction. For the first occurrence of the segment, the sequence number shall be one, for the second occurrence, the sequence number shall be two, etc.

NK1-2 Name (XPN) 00191

Definition: This field contains the name of the next of kin or associated party. Multiple names for the same person are allowed, but the legal name must be sent in the first sequence. Refer to HL7 Table 0200 - Name Type for valid values.

NK1-3 Relationship (CE) 00192

Definition: This field contains the actual personal relationship that the next of kin/associated party has to the patient. Refer to User-defined Table 0063 - Relationship for suggested values.

NK1-4 Address (XAD) 00193

Definition: This field contains the address of the next of kin/associated party. Multiple addresses are allowed for the same person. The mailing address must be sent in the first sequence. If the mailing address is not sent, then the repeat delimiter must be sent in the first sequence.

NK1-5 Phone Number (XTN) 00194

Definition: This field contains the telephone number of the next of kin/associated party. Multiple phone numbers are allowed for the same person. The primary telephone number must be sent in the first sequence. If the primary telephone number is not sent, then the repeat delimiter must be sent in the first sequence. Refer to HL7 Table 0201 - Telecommunication Use Code and HL7 Table 0202 - Telecommunication Equipment Type for valid values.

NK1-6 Business Phone Number (XTN) 00195

Definition: This field contains the business telephone number of the next of kin/associated party. Multiple phone numbers are allowed for the same person. The primary business telephone number must be sent in the first sequence. If the primary telephone number is not sent, then the repeat delimiter must be sent in the first sequence. Refer to HL7 Table 0201 - Telecommunication Use Code and HL7 Table 0202 - Telecommunication Equipment Type for valid values.

NK1-15 Administrative Sex (IS) 00111

Definition: This is the sex of the next of kin.

NK1-16 Date/Time of Birth (TS) 00110

Definition: This is the date of birth of the next of kin.

NTE—Note Segment

The NTE segment is used for sending notes and comments. It is used in relation to OBX in the VXU and RSP. It is also used in ADT in relation to various segments.

Table 5-10 Note Segment (NTE)

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
1	Set ID - NTE	SI		[0..1]	[0..1]	O	O	
2	Source of Comment	ID		[0..1]	[0..1]	O	O	
3	Comment	FT		[1..1]	[0..1]	R	O	
4	Comment Type	CE		[0..1]	[0..1]	O	O	

NTE Field Definitions

NTE-3 Comment (FT) 00098

Definition: This field contains the comment contained in the segment.

OBX—Observation Result Segment

The observation result segment has many uses. It carries observations about the object of its parent segment. In the VXU/RSP it is associated with the RXA or immunization record. The basic format is a question (OBX-3) and an answer (OBX-5).

Table 5-11 Observation Segment (OBX)

SEQ	Element Name	Data Type	Value Sets	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
1	Set ID – OBX	SI		[1..1]	[1..1]	R	O	

SEQ	Element Name	Data Type	Value Sets	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
2	Value Type	ID	0125	[1..1]	[1..1]	R	O	
3	Observation Identifier	CE	NIP 003	[1..1]	[1..1]	R	O	
4	Observation Sub-ID	ST		[1..1]	[1..1]	R	O	
5	Observation Value	varies		[1..1]	[1..1]	R	O	
6	Units	CE		[0..1]	[0..1]	C(R/RE)	O	If OBX-2 is valued "NM" or "SN"
7	References Range	ST		[0..1]	[0..1]	O	O	
8	Abnormal Flags	IS		[0..1]	[0..1]	O	O	
9	Probability	NM		[0..1]	[0..1]	O	O	
10	Nature of Abnormal Test	ID		[0..1]	[0..1]	O	O	
11	Observation Result Status	ID	0085	[1..1]	[1..1]	R	O	
12	Effective Date of Reference Range Values	TS		[0..1]	[0..1]	O	O	
13	User Defined Access Checks	ST		[0..1]	[0..1]	O	O	
14	Date/Time of the Observation	TS		[0..1]	[0..1]	RE	O	
15	Producer's Reference	CE		[0..1]	[0..1]	O	O	
16	Responsible Observer	XCN		[0..1]	[0..1]	O	O	
17	Observation Method	CE		[0..1]	[0..1]	C(RE/O)	O	If OBX-3.1 is valued "64994-7"
18	Equipment Instance Identifier	EI		[0..1]	[0..1]	O	O	
19	Date/Time of the Analysis	TS		[0..1]	[0..1]	O	O	

SEQ	Element Name	Data Type	Value Sets	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
20	Reserved for harmonization with V2.6			[0..1]	[0..1]	O	O	
21	Reserved for harmonization with V2.6			[0..1]	[0..1]	O	O	
22	Reserved for harmonization with V2.6			[0..1]	[0..1]	O	O	
23	Performing Organization Name	XON		[0..1]	[0..1]	O	O	
24	Performing Organization Address	XAD		[0..1]	[0..1]	O	O	
25	Performing Organization Medical Director	XCN		[0..1]	[0..1]	O	O	

OBX Field Definitions

OBX-1 Set ID - OBX (SI) 00569

Definition: This field contains the sequence number. The first instance shall be set to 1 and each subsequent instance shall be the next number in sequence.

OBX-2 Value Type (ID) 00570

Definition: This field contains the format of the observation value in OBX. If the value is CE then the result must be a coded entry.

OBX-3 Observation Identifier (CE) 00571

Definition: This field contains a unique identifier for the observation. The format is that of the Coded Element (CE). Example: |30963-3^Vaccine purchased with^LN|.

In most systems the identifier will **point** to a master observation table that will provide other attributes of the observation that may be used by the receiving system to process the observations it receives. This may be thought of as a question that the observation answers. In the example above, the question is “what funding program was this person eligible for when this vaccine was administered” The answer in OBX-5 could be “VFC eligible - MEDICAID”.

The 2.3.1 Implementation Guide used suffixes on the first sequence in OBX-3 to group related observations. For instance, reporting a VIS publication date and VIS receipt date each added a suffix of one LOINC code to a second LOINC code when recording VIS dates for a component vaccine. (38890-0&29768-9^DATE VACCINE INFORMATION STATEMENT PUBLISHED^LN) This is no longer acceptable. Grouping of related observations will be accomplished using Observation sub-id (OBX-4).

OBX-4 Observation Sub-ID (ST) 00572

Definition: This field is used to group related observations by setting the value to the same number. For example, recording VIS date and VIS receipt date for a combination vaccination requires 6 OBX segments. One OBX would indicate the vaccine group. It would have a pair of OBX indicating the VIS publication date and the VIS receipt date. These would have the same OBX-4 value to allow them to be linked. The second set of three would have another OBX-4 value common to each of them.

This field may be used to link related components of an observation. Each component of the observation would share an Observation sub-id.

For example:

OBX|1|LN|^observation 1 part 1^^^^|1|...

OBX|2|LN|^ observation 1 part 2^^^^|1|...

OBX|3|DT|^a different observation^^^^|2|...

Example:

OBX|1|CE|38890-0^COMPONENT VACCINE TYPE^LN|1|45^HEP B, NOS^CVX|||||F|<CR>

OBX|2|TS|29768-9^DATE VACCINE INFORMATION STATEMENT PUBLISHED^LN|1|20010711|||||F|<CR>

OBX|3|TS|29769-7^DATE VACCINE INFORMATION STATEMENT PRESENTED^LN|1|19901207|||||F|<CR>

OBX|4|CE|38890-0^COMPONENT VACCINE TYPE^LN|2|17^HIB,NOS^CVX|||||F|<CR>

OBX|5|TS|29768-9^DATE VACCINE INFORMATION STATEMENT PUBLISHED^LN|2|19981216|||||F|<CR>

OBX|6|TS|29769-7^DATE VACCINE INFORMATION STATEMENT PRESENTED^LN|2|19901207|||||F|<CR>

OBX-5 Observation Value (varies) 00573

Definition: This field contains the value observed by the observation producer. OBX-2-value type contains the data type for this field according to which observation value is formatted.

This field contains the value of OBX-3-observation identifier of the same segment. Depending upon the observation, the data type may be a number (e.g., dose number), a coded answer (e.g., a vaccine), or a date/time (the date/time that the VIS was given to the client/parent). An observation value is always represented as the data type specified in OBX-2-value type of the same segment. Whether numeric or short text, the answer shall be recorded in ASCII text.

Coded values

When an OBX segment contains values of CE data types, the observations are stored as a combination of codes and/or text.

OBX-6 Units (CE) 00574

Definition: This shall be the units for the value in OBX-5. The value shall be from the ISO+ list of units.

OBX-11 Observation Result Status (ID) 00579

Definition: This field contains the observation result status. The expected value is F or final.

OBX-14 Date/Time of the Observation (TS) 00582

Definition: Records the time of the observation. It is the physiologically relevant date-time or the closest approximation to that date-time of the observation.

OBX-17 Observation Method (CE)

Definition: This optional field can be used to transmit the method or procedure by which an observation was obtained when the sending system wishes to distinguish among one measurement obtained by different methods and the distinction is not implicit in the test ID.

In this Guide, it shall be used to differentiate the way that Eligibility Status was collected. The two choices are:

- Recorded in the sending system at the visit level
- Recorded in the sending system at the immunization level

ORC—Order Request Segment

The Common Order segment (ORC) is used to transmit fields that are common to all orders (all types of services that are requested). While not all immunizations recorded in an immunization message are able to be associated with an order, each RXA must be associated with one ORC, based on HL7 2.5.1 standard.

Table 5-12 Common Order Segment (ORC)

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
1	Order Control	ID	0119	[1..1]	[1..1]	R	R	
2	Placer Order Number	EI		[0..1]	[0..1]	RE	RE	
3	Filler Order Number	EI		[1..1]	[1..1]	R	R	
4	Placer Group Number	EI		[0..1]	[0..1]	O	O	
5	Order Status	ID		[0..1]	[0..1]	O	O	
6	Response Flag	ID		[0..1]	[0..1]	O	O	
7	Quantity/Timing	TQ		[0..0]	[0..0]	X	X	
8	Parent	EIP		[0..1]	[0..1]	O	O	
9	Date/Time of Transaction	TS		[0..1]	[0..1]	O	O	

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
10	Entered By	XCN		[0..1]	[0..1]	RE	RE	
11	Verified By	XCN		[0..1]	[0..1]	O	O	
12	Ordering Provider	XCN		[0..1]	[0..1]	C(RE/O)	C(RE/O)	If RXA-9.1 is valued "00"
13	Enterer's Location	PL		[0..1]	[0..1]	O	O	
14	Call Back Phone Number	XTN		[0..1]	[0..1]	O	O	
15	Order Effective Date/Time	TS		[0..1]	[0..1]	O	O	
16	Order Control Code Reason	CE		[0..1]	[0..1]	O	O	
17	Entering Organization	CE		[0..1]	[0..1]	O	O	
18	Entering Device	CE		[0..1]	[0..1]	O	O	
19	Action By	XCN		[0..1]	[0..1]	O	O	
20	Advanced Beneficiary Notice Code	CE		[0..1]	[0..1]	O	O	
21	Ordering Facility Name	XON		[0..1]	[0..1]	O	O	
22	Ordering Facility Address	XAD		[0..1]	[0..1]	O	O	
23	Ordering Facility Phone Number	XTN		[0..1]	[0..1]	O	O	
24	Ordering Provider Address	XAD		[0..1]	[0..1]	O	O	
25	Order Status Modifier	CWE		[0..1]	[0..1]	O	O	

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
26	Advanced Beneficiary Notice Override Reason	CWE		[0..1]	[0..1]	O	O	
27	Filler's Expected Availability Date/Time	TS		[0..1]	[0..1]	O	O	
28	Confidentiality Code	CWE		[0..1]	[0..1]	O	O	
29	Order Type	CWE		[0..1]	[0..1]	O	O	
30	Enterer Authorization Mode	CNE		[0..1]	[0..1]	O	O	
31	Parent Universal Service Identifier	CWE		[0..1]	[0..1]	O	O	

ORC Field Definitions

ORC-1 Order Control (ID) 00215

Definition: Determines the function of the order segment.

The value for VXU and RSP shall be RE.

Placer Order Number (ORC-2) and Filler Order Number (ORC-3) are unique identifiers from the system where an order was placed and where the order was filled. They were originally designed for managing lab orders. These fields have a usage status of Conditional in Version 2.5.1. The condition for each is that they must be present in either the OBR or ORC of a message. There has been confusion about usage for these fields. The Orders and Observations workgroup has addressed this confusion. In the context that ORC will be used in Immunization messaging either ORC-2 or ORC-3 must be populated. They may both be populated.

In the immunization context, it is not common to have one system placing and one filling an immunization order. In some cases neither is known. The use case that these have supported is to allow a system that sent an immunization record to another system to identify an immunization that needs to be changed using the Filler Order Number it had sent.

This Guide specifies that Placer Order Number is RE (required, but may be empty). The Filler Order Number SHALL be the unique immunization id of the sending system.
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ORC-2 Placer Order Number (EI) 00216

Definition: The placer order number is used to identify uniquely this order among all orders sent by a provider organization.

ORC-2 is a system identifier assigned by the placer software application. The Placer Order Number and the Filler Order Number are essentially foreign keys exchanged between applications for uniquely identifying orders and the associated results across applications. In the case where the ordering provider organization is not known, the sending system may leave this field empty.

ORC-3 Filler Order Number (EI) 00217

Definition: The filler order number is used to identify uniquely this order among all orders sent by a provider organization that filled the order.

<p>This shall be the unique identifier of the sending system in a given transaction. In the case where system A sends the record to system B and system B then forwards to system C, system B will send its' own unique identifier.</p> <p>Use of this foreign key will allow the initiating system to identify accurately the previously sent immunization record, facilitating update or deletion of that record.</p> <p>In the case where a historic immunization is being recorded (i.e. from an immunization card), the sending system SHALL assign an identifier as if it were an immunization administered by a provider associated with the provider organization owning the sending system. In the case where an RXA is conveying information about an immunization that was not given (e.g. refusal) the filler order number shall be 9999.</p> <p>Note that the receiving system will need to store this value in addition to its own internal id in order for this to be used.</p>
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ORC-10 Entered By (XCN) 00224

Definition: This identifies the individual that entered this particular order. It may be used in conjunction with an RXA to indicate who recorded a particular immunization.

ORC-12 Ordering Provider (XCN) 00226

Definition: This field contains the identity of the person who is responsible for creating the request (i.e., ordering physician). In the case where this segment is associated with a historic immunization record and the ordering provider is not known, then this field should not be populated.

ORC-17 Entering Organization (CE) 00231

Definition: This field identifies the organization that the enterer belonged to at the time he/she enters/maintains the order, such as medical group or department. The person who entered the request is defined in ORC-10 -entered by.

ORC-21 Ordering Facility Name (XON) 01311

Definition: This field contains the name of the facility placing the order. It is the organization sub-unit that ordered the immunization. (i.e. the clinic)

ORC-22 Ordering Facility Address (XAD) 01312

Definition: This field contains the address of the facility requesting the order.

ORC-23 Ordering Facility Phone Number (XTN) 01312

Definition: This field contains the phone number of the facility requesting the order.

ORC-24 Ordering Provider Address (XAD) 01314

Definition: This field contains the address of the care provider requesting the order.

ORC-28 Confidentiality Code (CWE) 00615

Definition: This field allows a system to indicate if special privacy rules apply to the RXA that is associated with this ORC. For instance, if a state had special rules about who may see records for HPV vaccinations, then this field could convey that. The recommended value to use in this case is R for restricted.

If this field is populated, it indicates the active choice of the patient or responsible person. In other words, if the value indicates that the information must be protected, the person has stated that it must be protected. An empty field indicates that the client has not actively specified the way they want this data to be handled.

Local implementation guides should describe the local usage of this field and value.

PD1—Patient Demographic Segment

The Patient Demographic Segment contains patient demographic information that may change from time to time. There are three primary uses for in Immunization Messages. These include indicating whether the person wants his/her data protected, whether the person wants to receive recall/reminder notices and the person's current status in the registry.

Table 5-13-Patient Demographic Segment (PD1)

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
1	Living Dependency	IS		[0..1]	[0..1]	O	O	
2	Living Arrangement	IS		[0..1]	[0..1]	O	O	
3	Patient Primary Facility	XON		[0..1]	[0..1]	O	O	
4	Patient Primary Care Provider Name & ID No.	XCN		[0..1]	[0..1]	O	O	
5	Student Indicator	IS		[0..1]	[0..1]	O	O	
6	Handicap	IS		[0..1]	[0..1]	O	O	
7	Living Will Code	IS		[0..1]	[0..1]	O	O	
8	Organ Donor Code	IS		[0..1]	[0..1]	O	O	

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
9	Separate Bill	ID		[0..1]	[0..1]	O	O	
10	Duplicate Patient	CX		[0..1]	[0..1]	O	O	
11	Publicity Code	CE	0215	[0..1]	[0..1]	RE	O	
12	Protection Indicator	ID	0136	[0..1]	[0..1]	RE	O	
13	Protection Indicator Effective Date	DT		[0..1]	[0..1]	C(RE/X)	O	If PD1-12 is valued
14	Place of Worship	XON		[0..1]	[0..1]	O	O	
15	Advance Directive Code	CE		[0..1]	[0..1]	O	O	
16	Immunization Registry Status	IS	0441	[0..1]	[0..1]	RE	O	
17	Immunization Registry Status Effective Date	DT		[0..1]	[0..1]	C(RE/X)	O	If PD1-16 is valued
18	Publicity Code Effective Date	DT		[0..1]	[0..1]	C(RE/X)	O	If PD1-11 is valued
19	Military Branch	IS		[0..1]	[0..1]	O	O	
20	Military Rank/Grade	IS		[0..1]	[0..1]	O	O	
21	Military Status	IS		[0..1]	[0..1]	O	O	

PD1 Field Definitions

PD1-3 Patient Primary Facility (XON) 00756

Definition: This field contains the name and identifier that specifies the “primary care” healthcare facility selected by the patient. Use may be specified locally.

PD1-4 Patient Primary Care Provider Name & ID No. (XCN) 00757

Definition: Identifier for primary care provider. Use may be specified locally.

PD1-11 Publicity Code (CE) 00743

Definition: This field contains a user-defined code indicating what level of publicity is allowed (e.g., No Publicity, Family Only) for the patient. In the context of immunization messages, this refers to how a person wishes to be contacted in a reminder or recall situation. Refer to User-defined Table 0215 - Publicity Code for suggested values.

PD1-12 Protection Indicator (ID) 00744

Definition: This field identifies whether a person's information may be shared with others². Specific protection policies are a local consideration (opt in or opt out, for instance). This field conveys the current state in the sending system.

The protection state must be actively determined by the clinician. If it is not actively determined, then the protection indicator shall be empty.

There are 3 states:

Protection State	Code
Yes, protect the data. Client (or guardian) has indicated that the information shall be protected. (Do not share data)	Y
No, it is not necessary to protect data from other clinicians. Client (or guardian) has indicated that the information does not need to be protected. (Sharing is OK)	N
No determination has been made regarding client's (or guardian's) wishes regarding information sharing	PD1-12 is empty.

² Local policies determine how data are protected. In general, it indicates who may view the client's data. It may be as narrow as just the provider that entered the information.

Notes on use of Y for Protection Indicator in 2.5.1 Guide vs. earlier Guides.

Note that the previous Implementation Guide stated that Y meant that a person's information could be shared. This was an incorrect interpretation of the use of this field. The meaning now aligns with the definition of HL7. That is, Y means data must be protected. Existing systems that use the old meaning will need to determine how they will send the correct value in a 2.5.1 message.

Note that the value sent in a message that is based on the 2.3.1 or 2.4 version of the HL7 standard shall continue to follow the old guidance. That is, Y means sharing is allowed and N means sharing is not allowed.

Note on Null and Empty in HL7

See notes on null and empty fields in Chapter 3 of the CDC IG.

PD1-13 Protection Indicator Effective Date (DT) 01566

Definition: This field indicates the effective date for PD1-12 - Protection Indicator.

PD1-16 Immunization Registry Status (IS) 01569

Definition: This field identifies the current status of the patient in relation to the sending provider organization.. Refer to User-defined Table 0441 - Immunization Registry Status for suggested values.

This field captures whether the sending provider organization considers this an active patient. There are several classes of responsibility. The status may be different between the sending and receiving systems. For instance, a person may no longer be active with a provider organization, but may still be active in the public health jurisdiction, which has the Immunization Information System (IIS). In this case the provider organization would indicate that the person was inactive in their system using this field in a message from them. The IIS would indicate that person was active in a message from the IIS.

PD1-17 Immunization Registry Status Effective Date (DT) 01570

Definition: This field indicates the effective date for the registry status reported in PD1-16 - Immunization Registry Status.

PD1-18 Publicity Code Effective Date (DT) 01571

Definition: This is the effective date for PD1-11 - Publicity Code.

PID—Patient Identifier Segment

The PID is used by all applications as the primary means of communicating patient identification information. This segment contains permanent patient identifying and demographic information that, for the most part, is not likely to change frequently.

Table 5-14-Patient Identifier Segment (PID)

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
1	Set ID - PID	SI		[1..1]	[1..1]	R	R	
2	Patient ID	CX		[0..0]	[0..1]	X	RE	
3	Patient Identifier List	CX		[1..*]	[1..*]	R	R	
4	Alternate Patient ID	CX		[0..0]	[0..0]	X	X	
5	Patient Name	XPN		[1..*]	[1..*]	R	R	
6	Mother's Maiden Name	XPN		[0..1]	[0..1]	RE	RE	
7	Date/Time of Birth	TS		[1..1]	[1..1]	R	R	
8	Administrative Sex	IS	0001	[0..1]	[0..1]	RE	RE	
9	Patient Alias	XPN		[0..0]	[0..0]	X	X	
10	Race	CE	0005	[0..*]	[0..*]	RE	RE	
11	Patient Address	XAD		[0..*]	[0..*]	RE	RE	

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
12	County Code	IS		[0..0]	[0..0]	X	X	
13	Phone Number - Home	XTN		[0..*]	[0..*]	RE	RE	
14	Phone Number - Business	XTN		[0..*]	[0..*]	O	O	
15	Primary Language	CE		[0..1]	[0..1]	O	O	
16	Marital Status	CE		[0..1]	[0..1]	O	O	
17	Religion	CE		[0..1]	[0..1]	O	O	
18	Patient Account Number	CX		[0..1]	[0..1]	O	O	
19	SSN Number - Patient	ST		[0..0]	[0..0]	X	X	
20	Driver's License Number - Patient	DLN		[0..0]	[0..0]	X	X	
21	Mother's Identifier	CX		[0..0]	[0..0]	X	X	
22	Ethnic Group	CE	0189	[0..1]	[0..1]	RE	RE	
23	Birth Place	ST		[0..1]	[0..1]	O	O	
24	Multiple Birth Indicator	ID	0136	[0..1]	[0..1]	RE	RE	
25	Birth Order	NM		[0..1]	[0..1]	C(RE/O)	C(RE/O)	If PID-24 is valued "Y"
26	Citizenship	CE		[0..1]	[0..1]	O	O	
27	Veterans Military Status	CE		[0..1]	[0..1]	O	O	
28	Nationality	CE		[0..1]	[0..1]	O	O	
29	Patient Death Date and Time	TS		[0..1]	[0..1]	C(RE/X)	C(RE/X)	If PID-30 is valued "Y"
30	Patient Death Indicator	ID	0136	[0..1]	[0..1]	RE	RE	
31	Identity Unknown Indicator	ID		[0..1]	[0..1]	O	O	
32	Identity Reliability Code	IS		[0..1]	[0..1]	O	O	

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
33	Last Update Date/Time	TS		[0..1]	[0..1]	O	O	
34	Last Update Facility	HD		[0..1]	[0..1]	O	O	
35	Species Code	CE		[0..1]	[0..1]	O	O	
36	Breed Code	CE		[0..1]	[0..1]	O	O	
37	Strain	ST		[0..1]	[0..1]	O	O	
38	Production Class Code	CE		[0..1]	[0..1]	O	O	
39	Tribal Citizenship	CWE		[0..1]	[0..1]	O	O	

PID Field Definitions

PID-1 Set ID - PID (SI) 00104

Definition: This field contains the number that identifies this transaction. For the first occurrence of the segment, the sequence number shall be one, for the second occurrence, the sequence number shall be two, etc.

PID-3 Patient Identifier List (CX) 00106

Definition: This field contains the list of identifiers (one or more) used by the healthcare facility to uniquely identify a patient (e.g., medical record number, billing number, birth registry, national unique individual identifier, etc.).

PID-5 Patient Name (XPN) 00108

Definition: This field contains the names of the patient, The primary or legal name of the patient is reported first. Therefore, the name type code in this field should be "L - Legal". Refer to HL7 Table 0200 - Name Type for valid values.

PID-6 Mother's Maiden Name (XPN) 00109

Definition: This field contains the family name under which the mother was born (i.e., before marriage). It is used to distinguish between patients with the same last name.

PID-7 Date/Time of Birth (TS) 00110

Definition: This field contains the patient's date and time of birth.

PID-8 Administrative Sex (IS) 00111

Definition: This field contains the patient's sex. Refer to User-defined Table 0001 - Administrative Sex for suggested values.

PID-10 Race (CE) 00113

Definition: This field refers to the patient's race. Refer to User-defined Table 0005 - Race for suggested values. The second triplet of the CE data type for race (alternate identifier, alternate text, and name of alternate coding system) is reserved for governmentally assigned codes.

PID-11 Patient Address (XAD) 00114

Definition: This field contains the mailing address of the patient. Address type codes are defined by HL7 Table 0190 - Address Type. Multiple addresses for the same person may be sent in the following sequence: The primary mailing address must be sent first in the sequence (for backward compatibility); if the mailing address is not sent, then a repeat delimiter must be sent in the first sequence.

This field is used for any type of address that is meaningfully associated with the client/patient. For instance Birth State is the state of the address of the birthing location, address type = BDL.

A person's address may be sent in this field or in the NK1 segment with a relationship code indicating Self. Local implementations should clarify how these addresses will be handled.

PID-13 Phone Number - Home (XTN) 00116

Definition: This field contains the patient's personal phone numbers. All personal phone numbers for the patient are sent in the following sequence. The first sequence is considered the primary number (for backward compatibility). If the primary number is not sent, then a repeat delimiter is sent in the first sequence. Each type of telecommunication shall be in its' own repetition. For example, if a person has a phone number and an email address, they shall each have a repetition. Refer to HL7 Table 0201 - Telecommunication Use Code and HL7 Table 0202 - Telecommunication Equipment Type for valid values.

PID-14 Phone Number - Business (XTN) 00117

Definition: This field contains the patient's business telephone numbers. All business numbers for the patient are sent in the following sequence. The first sequence is considered the patient's primary business phone number (for backward compatibility). If the primary business phone number is not sent, then a repeat delimiter must be sent in the first sequence. Refer to HL7 Table 0201 - Telecommunication Use Code and HL7 Table 0202 - Telecommunication Equipment Type for valid values.

PID-22 Ethnic Group (CE) 00125

Definition: This field further defines the patient's ancestry. Refer to User-defined Table 0189 - Ethnic Group. The second triplet of the CE data type for ethnic group (alternate identifier, alternate text, and name of alternate coding system) is reserved for governmentally assigned codes.

PID-24 Multiple Birth Indicator (ID) 00127

Definition: This field indicates whether the patient was part of a multiple birth. Refer to HL7 Table 0136 - Yes/No Indicator for valid values.

Y the patient was part of a multiple birth

N the patient was a single birth

Empty multiple birth status is undetermined.

PID-25 Birth Order (NM) 00128

Definition: When a patient was part of a multiple birth, a value (number) indicating the patient's birth order is entered in this field. If PID-24 is populated, then this field should be populated.

PID-29 Patient Death Date and Time (TS) 00740

Definition: This field contains the date and time at which the patient death occurred.

PID-30 Patient Death Indicator (ID) 00741

Definition: This field indicates whether the patient is deceased. Refer to HL7 Table 0136 - Yes/no Indicator for valid values.

Y the patient is deceased

N the patient is not deceased

Empty status is undetermined

PV1—Patient Visit Segment

The PV1 segment is used to convey visit specific information. The primary use in immunization messages in previous releases was to carry information about the client's eligibility status. This is now recorded at the immunization event (dose administered) level. Use of this segment for the purpose of reporting client eligibility for a funding program at the visit is not supported in the CDC IG.

QAK—Query Acknowledgement Segment

Table 5-15-Query Acknowledgement Segment

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
1	Query Tag	ST		[1..1]	[1..1]	R	R	

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
2	Query Response Status	ID	0208	[0..1]	[0..1]	RE	RE	
3	Message Query Name	CE	0471	[1..1]	[1..1]	R	R	
4	Hit Count	NM		[0..1]	[0..1]	O	O	
5	This payload	NM		[0..1]	[0..1]	O	O	
6	Hits remaining	NM		[0..1]	[0..1]	O	O	

QAK Field Definitions

QAK-1 Query Tag (ST) 00696

Definition: This field contains the value sent in QPD-2 (query tag) by the initiating system, and will be used to match response messages to the originating query. The responding system is required to echo it back as the first field in the query acknowledgement segment(QAK).

QAK-2 Query Response Status (ID) 00708

Definition: This field allows the responding system to return a precise response status. It is especially useful in the case where no data is found that matches the query parameters, but where there is also no error. It is defined with HL7 Table 0208 - Query Response Status.

QAK-3 Message Query Name (CE) 01375

Definition: This field contains the name of the query. This shall mirror the QPD-1 (Message Query Name) found in the query message that is being responded to.

QPD – Query Parameter Definition

The QPD segment defines the parameters of the query.

Table 5-16-Query Parameter Definition (QPD)

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC //S Cardinality	CDC IG Usage	SC-DHEC //S Usage	Conditional Predicate
1	Message Query Name	CE	0471	[1..1]	[1..1]	R	R	
2	Query Tag	ST		[1..1]	[1..1]	R	R	
3-n	User Parameters (in successive fields)	varies				R	R	

QPD Field Definitions

QPD-1 Message Query Name (CE) 01375

Definition: This field contains the name of the query. These names are assigned by the function-specific chapters of this specification. It is one to one with the conformance statement for this query name, and it is in fact an identifier for that conformance statement.

QPD-2 Query Tag (ST) 00696

Definition: This field must be valued by the initiating system to identify the query, and may be used to match response messages to the originating query.

The responding system is required to echo it back as the first field in the query acknowledgement segment (QAK).

This field differs from *MSA-2-Message control ID* in that its value remains constant for each message (i.e. all continuation messages) associated with the query, whereas *MSA-2-Message control ID* may vary with each continuation message, since it is associated with each individual message, not the query as a whole.

QPD-3 User Parameters (Varies) 01435

Definition: These successive parameter fields hold the values that the Client passes to the Server.

The client data is presented as a sequence of HL7 fields. Beginning at *QPD-3-User parameters*, the remaining fields of the QPD segment carry user parameter data. Each QPD user parameter field corresponds to one parameter defined in the Conformance Statement, where

each name, type, optionality, and repetition of each parameter has been specified. While these parameters are understood to be usually “and-ed” together, the user must inspect the required Conformance Statement to understand properly each. Except in the QSC variant, the parameter names do not need to be stated in the query; they are understood to be positional based on the Conformance Statement.

Each parameter field may be specified in the Conformance Statement to be of any single data type, including the complex QIP and QSC types. Parameter fields in the QPD segment appear in the same order as in the Conformance Statement.

RCP – Response Control Parameter Segment

The RCP segment is used to restrict the amount of data that should be returned in response to query. It lists the segments to be returned.

Table 5-17-Response Control Parameter

SEQ	Element Name	Data Type	Value set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
1	Query Priority	ID	0091	[0..1]	[0..1]	RE	O	
2	Quantity Limited Request	CQ	0126	[0..1]	[0..1]	RE	O	
3	Response Modality	CE		[0..1]	[0..1]	O	O	
4	Execution and Delivery Time	TS		[0..1]	[0..1]	O	O	
5	Modify Indicator	ID		[0..1]	[0..1]	O	O	
6	Sort-by Field	SRT		[0..1]	[0..1]	O	O	
7	Segment group inclusion	ID		[0..*]	[0..*]	O	O	

RCP Field Definitions

RCP-1 Query Priority (ID) 00027

Definition: This field contains the time frame that the response is expected. Refer to HL7 Table 0091 - Query priority for valid values. Table values and subsequent fields specify time frames for response. Only I for immediate shall be used for this field.

RCP-2 Quantity Limited Request (CQ) 00031

Definition: This field contains the maximum length of the response that can be accepted by the requesting system. Valid entries are numerical values (in the first component) given in the units specified in the second component. Default is LI (lines). The expected type is records, so the second component is constrained to RD.

Note that this field is the maximum total records to return. The Version 2.5.1 standard indicates the maximum number to return in each batch. No batching of responses is permitted in this Guide.

RCP-3 Response Modality (CE) 01440

Definition: This field specifies the timing and grouping of the response message(s). Refer to HL7 Table 0394 – Response modality for valid values.

RCP-7 Segment Group Inclusion (ID) 01594

Definition: Specifies those optional segment groups which are to be included in the response. Refer to HL7 Table 0391—Segment group for values for Segment Group. This is a repeating field, to accommodate inclusion of multiple segment groups. The default for this field, not present, means that all relevant groups are included.

Note: Although the codes for segment groups are taken from HL7 Table 0391, the exact segment-level definition of a segment group (e.g. PIDG) is given only in the conformance statement of the query in which this segment group appears.

RXA-- Pharmacy/Treatment Administration Segment

The RXA segment carries pharmacy administration data. It is a child of an ORC segment, which a repeating segment in the RSP and VXU messages. Because ORC are allowed to repeat an unlimited numbers of vaccinations may be included in a message. Each RXA must be preceded by an ORC.³

³ The HL7 Version 2.5.1 document clearly indicates that any RXA must be associated with an ORC. In the case of immunization, each immunization will have its own ORC.

There is a change requiring an ORC conflicts with the version 2.3.1 Implementation Guide. In that, ORC is optional and in fact rarely included in a VXU.

Table 5-18 Pharmacy/Treatment Administration (RXA)

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
1	Give Sub-ID Counter	NM		[1..1]	[1..1]	R	R	
2	Administration Sub-ID Counter	NM		[1..1]	[1..1]	R	R	
3	Date/Time Start of Administration	TS		[1..1]	[1..1]	R	R	
4	Date/Time End of Administration	TS		[0..1]	[0..1]	RE	RE	
5	Administered Code	CE	CVX	[1..1]	[1..1]	R	R	
6	Administered Amount	NM		[1..1]	[1..1]	R	R	
7	Administered Units	CE	UCUM	[0..1]	[0..1]	C(R/O)	C(R/O)	If RXA-6 is not valued "999"
8	Administered Dosage Form	CE		[0..1]	[0..1]	O	O	
9	Administration Notes	CE	NIP 001	[0..*]	[0..*]	C(R/O)	C(R/O)	If RXA-20 is valued "CP" or "PA"
10	Administering Provider	XCN		[0..1]	[0..1]	RE	RE	
11	Administered-at Location	LA2		[0..1]	[0..1]	RE	RE	
12	Administered Per (Time Unit)	ST		[0..1]	[0..1]	O	O	
13	Administered Strength	NM		[0..1]	[0..1]	O	O	

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
14	Administered Strength Units	CE		[0..1]	[0..1]	O	O	
15	Substance Lot Number	ST		[0..*]	[0..*]	C(R/O)	C(R/O)	If RXA-9.1 is valued "00"
16	Substance Expiration Date	TS		[0..1]	[0..1]	C(RE/O)	C(RE/O)	If RXA-15 is valued
17	Substance Manufacturer Name	CE	MVX	[0..*]	[0..*]	C(R/O)	C(R/O)	If RXA-9.1 is valued "00"
18	Substance/Treatment Refusal Reason	CE	NIP 002	[0..*]	[0..*]	C(R/X)	C(R/X)	If RXA-20 is valued "RE"
19	Indication	CE		[0..1]	[0..1]	O	O	
20	Completion Status	ID	0322	[0..1]	[0..1]	RE	RE	
21	Action Code - RXA	ID	0323	[0..1]	[0..1]	RE	RE	
22	System Entry Date/Time	TS		[0..1]	[0..1]	O	O	
23	Administered Drug Strength Volume	NM		[0..1]	[0..1]	O	O	
24	Administered Drug Strength Volume Units	CWE		[0..1]	[0..1]	O	O	
25	Administered Barcode Identifier	CWE		[0..1]	[0..1]	O	O	
26	Pharmacy Order Type	ID		[0..1]	[0..1]	O	O	

RXA Field Definitions

RXA-1 Give Sub-ID Counter (NM) 00342

Definition: This field is used to match an RXA and RXG. Not a function under IIS. Constrain to 0 (zero).

RXA-2 Administration Sub-ID Counter (NM) 00344

Definition: This field is used to track multiple RXA under an ORC. Since each ORC has only one RXA in immunization messages, constrain to 1. This should not be used for indicating dose number, which belongs in an OBX.

Note that the previous Implementation Guide suggested that this be used for indicating dose number. This use is no longer supported.

RXA-3 Date/Time Start of Administration (TS) 00345

Definition: The date this vaccination occurred. In the case of refusal or deferral, this is the date that the refusal or deferral was recorded. In the case of a forecast dose, this is the date the forecast was made. In the case of a refusal, it is the date the refusal was noted.

RXA-4 Date/Time End of Administration (If Applies) (TS) 00346

Definition: In the context of immunization, this is equivalent to the Start date/time. If populated it should be = RXA-3. If empty, the date/time of *RXA-3-Date/Time Start of Administration* is assumed.

RXA-5 Administered Code (CE) 00347

Definition: This field identifies the medical substance administered. If the substance administered is a vaccine, CVX codes should be used in the first triplet to code this field (see CVX Table - Codes for vaccines administered). The second set of three components could be used to represent the same vaccine using a different coding system, such as Current Procedural Terminology (CPT). CVX code is the strongly preferred code system.

RXA-6 Administered Amount (NM) 00348

Definition: This field records the amount of pharmaceutical administered. The units are expressed in the next field, RXA-7. Registries that do not collect the administered amount should record the value “999” in this field.

RXA-7 Administered units (CE) 00349

Definition: This field is conditional because it is required if the administered amount code does not imply units. This field must be in simple units that reflect the actual quantity of the substance administered. It does not include compound units. This field is not required if the previous field is populated with 999.

RXA-9 Administration Notes (CE) 00351

Definition: This field is used to indicate whether this immunization record is based on a historical record or was given by the reporting provider. It should contain the information source (see *NIP-defined Table 0001 - Immunization Information Source*). The first component shall contain the code, the second the free text and the third shall contain the name of the code system. (NIP001) Sending systems should be able to send this information. Receiving systems should be able to accept this information.

This field may be used for other notes if specified locally. The first repetition shall be the information source. If other notes are sent when information source is not populated, then the first repetition shall be empty.

Other notes may include text only in component 2 of the repeat. Acceptance of text only is by local agreement only.

Information source is an NVAC core data element. It speaks to the reliability of the immunization record. IIS rely on this information.

RXA-10 Administering Provider (XCN) 00352

Definition: This field is intended to contain the name and provider ID of the person physically administering the pharmaceutical.

Note that previous Implementation Guide (2.3.1) overloaded this field by using local codes to indicate administering provider, ordering provider and recording provider. This is a misuse of this field and not supported in this Guide. The ordering and entering providers are indicated in the associated ORC segment.

RXA-11 Administered-at Location (LA2) 00353

Definition: The name and address of the facility that administered the immunization. Note that the components used are:

Component 4: The facility name/identifier.

Subcomponent 1: identifier⁴

Subcomponent 2: Universal ID This shall be an OID, if populated. Note that this should not be a local code, but rather a universal id code.

Subcomponent 3: Universal ID type (specify which universal id type)

Note that if subcomponent 1 is populated, 2 and 3 should be empty. If subcomponent 2 is populated with an OID, subcomponent 3 must be populated with ISO.

Component 9-15: Facility address.

Components not specifically mentioned here are not expected in immunization messages.

RXA-15 Substance Lot Number (ST) 01129

Definition: This field contains the lot number of the medical substance administered. It may remain empty if the dose is from a historical record.

Note that the lot number is the number printed on the label attached to the container holding the substance and on the packaging, which houses the container. If two lot numbers are associated with a product that is a combination of different components, they may be included in this field. The first repetition should be the vaccine.

RXA-16 Substance Expiration Date (TS) 01130

Definition: This field contains the expiration date of the medical substance administered. It may remain empty if the dose is from a historical record.

⁴ This value should uniquely identify a specific facility. Systems may choose to publish a table with local values.

Note that the vaccine expiration date does not always have a "day" component; therefore, such a date may be transmitted as YYYYMM.
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RXA-17 Substance Manufacturer Name (CE) 01131

Definition: This field contains the manufacturer of the medical substance administered.

Note that for vaccines, code system MVX should be used to code this field.
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RXA-18 Substance/Treatment Refusal Reason (CE) 01136

Definition: This field contains the reason the patient refused the medical substance/treatment. Any entry in the field indicates that the patient did not take the substance. If this field is populated RXA-20, Completion Status shall be populated with RE.

RXA-20 Completion Status (ID) 01223

Definition: This field indicates if the dose was successfully given. It must be populated with RE if RXA-18 is populated with NA. If a dose was not completely administered or if the dose were not potent this field may be used to label the immunization. . If this RXA has a CVX of 998 (no vaccine administered) then this shall be populated with NA.

RXA-21 Action Code – RXA (ID) 01224

Definition: This field indicates the action expected by the sending system. It can facilitate update or deletion of immunization records. This field has a usage of RE. If it is left empty, then receiving systems should assume that the action code is A.

ORC-3, Placer order number, may be used to link to a specific immunization if the system receiving the request has recorded this from the initial order. Local implementers should specify its' use in a local implementation guide. The action code U (Update system) is used to indicate to a subordinate receiver that a previously sent immunization should be changed. Most IIS have specific criteria for determining whether to add or update an immunization that does not rely directly on this field. For this reason it is common practice to indicate action as Add even if this vaccination has been previously reported. It is important not assume that Updates will be or need to be specifically indicated.

RXA-22 System Entry Date/Time (TS) 01225

Definition: This field records the date/time that this record was created in the originating system. Local implementations should specify its use.

RXR-- Pharmacy/Treatment Route Segment

The Pharmacy/Treatment Route segment contains the alternative combination of route, site, administration device, and administration method that are prescribed as they apply to a particular order.

Table 5-19 Pharmacy/Treatment Route (RXR)

SEQ	Element Name	Data Type	Value Set	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Conditional Predicate
1	Route	CE	0162	[1..1]	[1..1]	R	R	
2	Administration Site	CWE	0163	[0..1]	[0..1]	RE	RE	
3	Administration Device	CE		[0..1]	[0..1]	O	O	
4	Administration Method	CE		[0..1]	[0..1]	O	O	
5	Routing Instruction	CE		[0..1]	[0..1]	O	O	
6	Administration Site Modifier	CWE		[0..1]	[0..1]	O	O	

RXR Field Definitions

RXR-1 Route (CE) 00309

Definition: This field is the route of administration.

Refer to User-Defined Table 0162 - Route of Administration for valid values.

This will change, based on HITSP. They specify use of FDA list. Systems should be prepared to accept either FDA or HL7 codes.

RXR-2 Administration Site (CWE) 00310

Definition: This field contains the site of the administration route.

6. Messages for Transmitting Immunization Information

This chapter describes each of the messages used to accomplish the use cases described in Chapter 2. These messages are built from the segments described in Chapter 5, Segments and Message Details. The Segments are built using the Data Types specified in Chapter 4. Readers are referred to these chapters for specifics on these components. Issues related to segments and fields that are message specific will be addressed in this chapter.

Table 6-1-Supported Messages

Message	Purpose	Related Messages	Associated Profiles	SC-DHEC IIS Supported
VXU	Send Immunization History	ACK		Yes
QBP	Request Immunization History and Request Person Id	RSP	Z34^CDC	Yes
RSP	Respond to Request for Immunization Record and Respond to Request for Person Id	QBP	Z31^CDC Z32^CDC	Yes
ACK	Send Message Acknowledgement	VXU, ADT, QBP		Yes
ADT	Send Person Demographic Data	ACK		No

Send Immunization History--VXU

Systems may send unsolicited immunization records using a VXU. This may be a record that is new to the receiving system or may be an update to an existing record. The following table lists the segments that are part of a VXU.

Table 6-2--VXU Segment Usage

Segment	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Comment
MSH	[1..1]	[1..1]	R	R	
SFT	[0..*]	[0..*]	O	O	
PID	[1..1]	[1..1]	R	R	
PD1	[0..1]	[0..1]	RE	RE	
NK1	[0..*]	[0..*]	RE	RE	
PV1	[0..1]	[0..1]	O	O	
PV2	[0..1]	[0..1]	O	O	
GT1	[0..1]	[0..1]	O	O	
Begin Insurance Group	[0..*]	[0..*]	O	O	
IN1	[0..1]	[0..1]	R	R	
IN2	[0..1]	[0..1]	O	O	
IN3	[0..1]	[0..1]	O	O	
End Insurance Group					
Begin Order group	[0..*]	[0..*]	RE	RE	
ORC	[1..*]	[1..*]	RE	RE	
TQ1	[0..1]	[0..1]	O	O	
TQ2	[0..1]	[0..1]	O	O	
RXA	[1..1]	[1..1]	R	R	
RXR	[0..1]	[0..1]	RE	RE	
OBX	[0..*]	[0..*]	RE	RE	
NTE	[0..1]	[0..1]	RE	RE	
End Order Group					

Acknowledging a Message--ACK

The ACK returns an acknowledgement to the sending system. This may indicate errors in processing.

Table 6-3 Message Acknowledgement Segment (ACK)

Segment	CDC IG Cardinality	SC-DHEC IIS Cardinality	CDC IG Usage	SC-DHEC IIS Usage	Comment
MSH	[1..1]	[1..1]	R	R	
SFT	[0..1]	[0..1]	O	O	
MSA	[1..1]	[1..1]	R	R	
ERR	[0..*]	[0..*]	RE	RE	

Note: For the general acknowledgment (ACK) message, the value of MSH-9-2-Trigger event is equal to the value of MSH-9-2-Trigger event in the message being acknowledged. The value of MSH-9-3-Message structure for the general acknowledgment message is always ACK.

7. Query and Response Profile (QBP/RSP)

For detailed specifics, please refer to Chapter 7 of the CDC IG Release 1.5.

8. Change History

Version	Date	Author	Location	Change
1.0	10/20/2015	R.W.	Throughout	Initial input of SCDHEC IIS rules.

Appendix A: Code Tables

Appendix B: Guidance on Usage and Example Messages